DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Dallas Forester
No. C37765
Exp. 12-31-06
CIVIL
STATE OF CALIFORNIA

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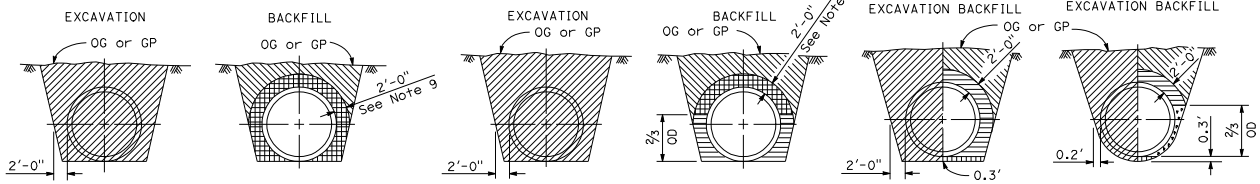
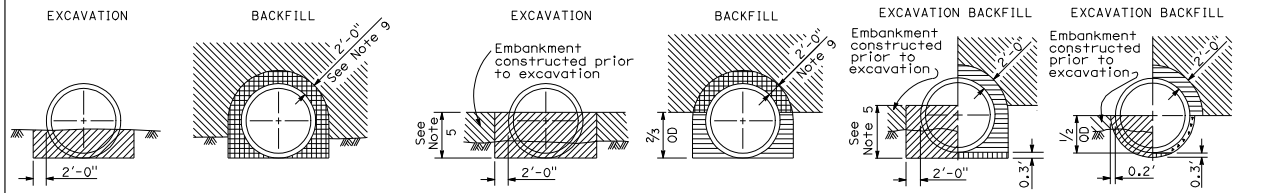


IN TRENCH | IN TRENCH | SAND BEDDING | SOIL CEMENT BEDDING

IN TRENCH



IN EMBANKMENT | IN EMBANKMENT | SAND BEDDING | SOIL CEMENT BEDDING

A B

IN EMBANKMENT

MINIMUM ALLOWABLE CLASSES OF RCP FOR METHOD 1

COVER	MINIMUM CLASS AND D-LOAD
5.9'	Class II 1000D
6.0' - 7.9'	Class III 1350D
8.0' - 9.9'	Class III Special 1700D
10.0' - 11.9'	Class IV 2000D
12.0' - 13.9'	Class IV Special 2500D
14.0' - 16.9'	Class V 3000D
17.0' - 20.0'	Class V Special 3600D

See Notes 6 and 9

METHOD 1

MINIMUM ALLOWABLE CLASSES OF RCP FOR METHOD 2

COVER	MINIMUM CLASS AND D-LOAD
15.9'	Class II 1000D
16.0' - 19.9'	Class III 1350D
20.0' - 24.9'	Class III Special 1700D
25.0' - 27.9'	Class IV 2000D
28.0' - 34.9'	Class IV Special 2500D
35.0' - 41.9'	Class V 3000D
42.0' - 50.0'	Class V Special 3600D

See Notes 8 and 9

METHOD 2

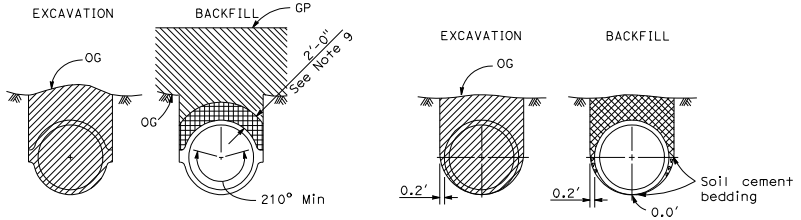
REINFORCED CONCRETE PIPE

See Notes 1, 2, 7 and 10

MINIMUM ALLOWABLE CLASSES OF RCP FOR METHOD 3

COVER	MINIMUM CLASS AND D-LOAD
25.9'	Class II 1000D
26.0' - 31.9'	Class III 1350D
32.0' - 37.9'	Class III Special 1700D
38.0' - 44.9'	Class IV 2000D
45.0' - 55.9'	Class IV Special 2500D
56.0' - 67.9'	Class V 3000D
68.0' - 80.0'	Class V Special 3600D

METHOD 3



IN TRENCH ONLY
CAST-IN-PLACE

IN TRENCH ONLY
PRECAST
See Notes 7 and 11

NON-REINFORCED CONCRETE PIPE

LEGEND

- Structure Excavation (Culvert)
- Structure Backfill (Culvert) 95% relative compaction
- Structure Backfill (Culvert) 90% relative compaction
- Loose Backfill
- Sand Bedding
- Soil Cement Bedding
- Roadway Embankment
- Original Ground

OD = Outside diameter for circular pipes and maximum vertical dimension for other shapes

ID = Inside diameter for circular pipes and minimum vertical dimension for other shapes

NOTES:

1. Unless otherwise shown on the plans or specified in the special provisions, the Contractor shall have the option of selecting the class of RCP and the method of backfill to be used, provided the height of cover does not exceed the value shown for the RCP selected.
   Example:
   2'-0" RCP culvert with maximum cover of 19'-0" the options are:
   a) Class V Special or stronger with Method 1.
   b) Class III or stronger with Method 2.
   c) Class II or stronger with Method 3.
   Cover is defined as the maximum vertical distance from top of pipe to finished grade within the length of any given culvert.
2. The class of RCP, method of backfill and bedding selected shall be the same throughout the length of any given culvert.
3. The "length of any culvert" is defined as the culvert between:
   a) Successive drainage structures (inlets, junction boxes, headwalls, etc.).
   b) A drainage structure and the inlet or outlet end of the culvert.
   c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
4. Slope or shore excavation sides as necessary.
5. Embankment height prior to excavation for installation of all classes of RCP under Methods 2 and 3A shall be as follows:
   Pipe sizes 1'-0" to 3'-6", I D = 2'-6"
   Pipe sizes 4'-0" to 7'-0", I D = 2/3 OD
   Pipe sizes larger than 7'-0", I D = 5'-0"
6. The maximum size for all classes of RCP placed under Method 1 is 78" ID.
7. Non-reinforced precast pipe sizes 3'-0" or smaller may also be placed under Methods 1, 2 or 3.
8. Oval or arch shaped RCP shall be placed under Method 2 only.
9. Embankment compaction requirements govern over the 90% relative compaction backfill requirement within 2'-6" of finished grade.
10. Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
11. Where the precast non-reinforced concrete pipe is used as a substitute for the cast-in-place pipe, both the wall thickness and the concrete strength shall be at least as great as that specified for the cast-in-place pipe. The fill height allowed shall not exceed that shown for the cast-in-place pipe.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

EXCAVATION AND BACKFILL CONCRETE PIPE CULVERTS

NO SCALE

A62D

8-8-05